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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,632	03/16/2004	Robert G. Moores JR.	0275D-214COD	2922

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EXAMINER	
KALAFUT, STEPHEN J	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,632	MOORES ET AL.	
	Examiner	Art Unit	
	Stephen J. Kalafut	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *59-76* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *59-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *16 March 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 66-68 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Mita (US 5,456,994).

Mita discloses a battery pack (1), which is cooled by enabling a fluid to enter into the pack, via an inlet (4), pass by the cells and cool them (column 4, lines 37-39), and then exit to ambient, via an outlet (6). As seen in figure 2, the fluid is channeled between and directed to the cells. The fluid is forced through its passages by a fan (5). Recitations of intended use, such as "for a hand held cordless tool" do not distinguish.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 73-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz *et al.* (US 5,480,734) in view of Bae *et al.* (US 5,567,542).

Schulz *et al.* disclose a removable battery pack (7) for a power tool (1), which may be cooled during charging via ventilation slits (column 2, lines 65-67). Thus, heat would be

dissipated from the cells within the pack. Schulz *et al.* do not disclose the use of a heat sink in association with any of the cells. Bae *et al.* disclose battery cells (12) cooled with the aid of heat sink members (18). Because these heat sinks would help the cells dissipate their heat to the surroundings (column 1,lines 33-37), it would be obvious to use the heat sinks of Bae *et al.* with the cells in the battery pack of Schulz *et al.* While Schulz *et al.* disclose the cooling of their cells during charging, they also teach that the cells may experience increased temperature during discharging (column 1, lines 36-38), which would be while the battery pack is in contact with the power tool. For this reason, it would also be obvious to cool the pack during discharge, which would also to some extent cool the power tool.

Claims 59-61, 63, 66-68 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz *et al.* (US 5,480,734) in view of Mita (US 5,456,994).

Schulz *et al.* disclose a removable battery pack (7) for a power tool (1), which may be cooled during charging via ventilation slits (column 2, lines 65-67). Schulz *et al.* also teach that the cells may experience increased temperature during discharging (column 1, lines 36-38), which would be while the battery pack is in contact with the power tool. This would also show that cooling the pack, and thus to some extent the power tool, is also desirable. Schulz *et al.* do not recite the specific details of how the cooling fluid is moved through the battery pack. Mita discloses a battery pack (1), which is cooled by enabling a fluid to enter into the pack, via an inlet (4), pass by the cells and cool them (column 4, lines 37-39), and then exit to ambient, via an outlet (6). As seen in figure 2, the fluid is channeled between and directed to the cells. The fluid is forced through its passages by a fan (5). Since this arrangement would efficiently cool the

cells in the pack (column 2, lines 2-21), it would be obvious to use the inlet, outlet, channels and fan of Mita to cool the battery pack of Schulz *et al.*

Claims 62 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz *et al.* in view of Mita as applied to claims 59 and 66 above, and further in view of Bae *et al.*

The combination of Schulz *et al.* and Mita does not teach the use of a heat sink in association with any of the cells. Bae *et al.* disclose battery cells (12) cooled with the aid of heat sink members (18). Because these heat sinks would help the cells dissipate their heat to the surroundings (column 1,lines 33-37), it would be obvious to use the heat sinks of Bae *et al.* with the cells in the battery pack of Schulz *et al.*, along with the ventilation system of Mita, to dissipate the heat generated by the battery pack of Schulz *et al.*

Claims 64, 65, 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz *et al.* in view of Mita as applied to claims 59 and 66 above, and further in view of Peled *et al.* (US 5,447,807).

These claims differ from combination of Schulz *et al.* and Mita by reciting the step of sensing the temperature of one or more cells. Peled *et al.* disclose a battery which uses a thermal switch (TS, in figure 1), which activates the motor (2) of a cooling fan when the temperature exceeds a predetermined value, as sensed by a sensor (column 3, lines 43-52). Because the fan is activated only when the cooling is necessary, this would decrease the amount of "wasted" power used for cooling (column 3, lines 40-42). To obtain this increase in cooling power efficiency, it would be obvious to use the sensor and thermal switch of Peled *et al.* with the battery pack of

Schulz *et al.*, along with the ventilation system of Mita. Since the system of Mita directs the cooling fluid past all of the cells in the pack, to some extent their temperatures would be equalized by using that system.

The disclosure is objected to because of the following informalities: The numeral 62 does not appear in figure 3, as stated on page 9, line 24. The numerals 36 and 78 do not appear in figure 3, as stated on page 10, lines 3 and 12. Instead, the numeral 76 appears to denote two different baffles, while the cells in this figure are numbered 66, rather than 36. The numeral 83 does not appear in figure 4a, as stated on page 10, line 23. The numeral 200 does not appear in figure 12, as stated on page 15, lines 7 and 13. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk